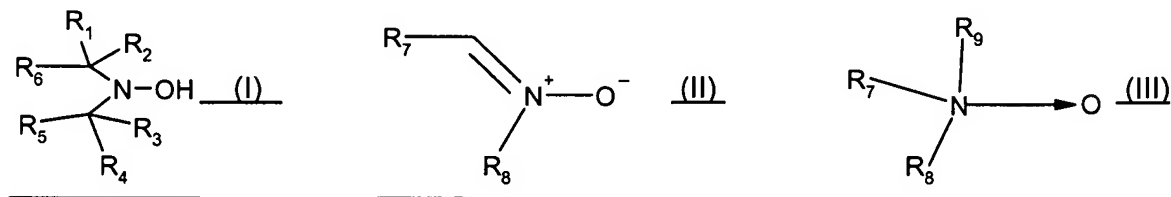


## In the Claims

### 1. (currently amended) A polymerizable composition comprising

- a) an ethylenically unsaturated monomer;
- b) a radical polymerization initiator; and
- c) a hydroxylamine, a nitron or an alkyl N-oxid having a molecular weight of more than 250 g/mol,

where the hydroxylamine, the nitron and the alkyl N-oxid are of formulae (I), (II) and (III)



where

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are independently hydrogen, phenyl or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>5</sub> and R<sub>6</sub> are independently C<sub>7</sub>-C<sub>35</sub>alkyl, C<sub>7</sub>-C<sub>35</sub>alkenyl or C<sub>7</sub>-C<sub>35</sub>alkinyl, which may be unsubstituted or substituted by phenyl, halogen, NH<sub>2</sub>, N(R<sub>21</sub>)<sub>2</sub>, -OH, -CN, -NO<sub>2</sub>, or -COOR<sub>21</sub>; or which may be interrupted by -O- or -C(O)-; or

R<sub>5</sub> and R<sub>6</sub> together are an alkylene bridge, which may be interrupted by a -O-, -C(O)- or a -N(C<sub>1</sub>-C<sub>18</sub>alkyl)- group to form a heterocyclic 5, 6, 7 or 8 membered ring, which may be further substituted by a -O-C(O)-]<sub>n</sub>R<sub>20</sub>, NR<sub>21</sub>-C(O)-]<sub>n</sub>R<sub>20</sub> or a ketal group;

n is 1 or 2; wherein, when n is 1, R<sub>20</sub> is hydrogen or C<sub>1</sub>-C<sub>18</sub>alkyl and, when n is 2, R<sub>20</sub> is

C<sub>1</sub>-C<sub>18</sub>alkylene; R<sub>21</sub> is hydrogen or C<sub>1</sub>-C<sub>18</sub>alkyl;

R<sub>7</sub> and R<sub>8</sub> are independently C<sub>8</sub>-C<sub>36</sub>alkyl; and

R<sub>9</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl.

### 2. (previously presented) A polymerizable composition according to claim 1 wherein the ethylenically unsaturated monomer is selected from the group consisting of ethylene, propylene, n-butylene, i-butylene, styrene, substituted styrene, conjugated dienes, acrolein, vinyl acetate,

vinylpyrrolidone, vinylimidazole, maleic anhydride, (alkyl)acrylic acid anhydrides, (alkyl)acrylic acid salts, (alkyl)acrylic esters, (alkyl)acrylonitriles, (alkyl)acrylamides, vinyl halides and vinylidene halides.

**3. (previously presented)** A polymerizable composition according to claim 1 wherein the ethylenically unsaturated monomer is a compound of formula  $\text{CH}_2=\text{C}(\text{R}_a)-(\text{C}=\text{Z})-\text{R}_b$ , wherein Z is O or S;

$\text{R}_a$  is hydrogen or  $\text{C}_1\text{-C}_4$ alkyl;

$\text{R}_b$  is  $\text{NH}_2$ ,  $\text{O}^-(\text{Me}^+)$ , glycidyl, unsubstituted  $\text{C}_1\text{-C}_{18}$ alkoxy,  $\text{C}_2\text{-C}_{100}$ alkoxy interrupted by at least one N and/or O atom, or hydroxy-substituted  $\text{C}_1\text{-C}_{18}$ alkoxy, unsubstituted  $\text{C}_1\text{-C}_{18}$ alkylamino, di( $\text{C}_1\text{-C}_{18}$ alkyl)amino, hydroxy-substituted  $\text{C}_1\text{-C}_{18}$ alkylamino or hydroxy-substituted di( $\text{C}_1\text{-C}_{18}$ alkyl)amino,  $-\text{O}-\text{CH}_2-\text{CH}_2-\text{N}(\text{CH}_3)_2$  or  $-\text{O}-\text{CH}_2-\text{CH}_2-\text{N}^+\text{H}(\text{CH}_3)_2 \text{An}^-$ ;

$\text{An}^-$  is an anion of a monovalent organic or inorganic acid; and

Me is a monovalent metal atom or the ammonium ion.

**4. (original)** A polymerizable composition according to claim 2 wherein the ethylenically unsaturated monomer is styrene, n-butylacrylate, tert-butylacrylate, methylacrylate, ethylacrylate, propylacrylate, hexylacrylate or hydroxyethylacrylate.

**5. (original)** A polymerizable composition according to claim 1 wherein the radical polymerization initiator is an azo compound, a peroxide, a perester or a hydroperoxide.

**6. (original)** A polymerizable composition according to claim 5 wherein the radical polymerization initiator is an azo compound or a peroxide.

**7. (canceled)**

**8. (currently amended)** A polymerizable composition according to claim ~~[[7]]~~**1** wherein ~~the comprising a hydroxylamine is~~ of formula (I).

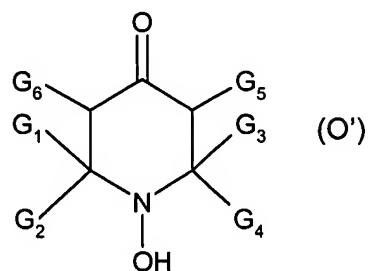
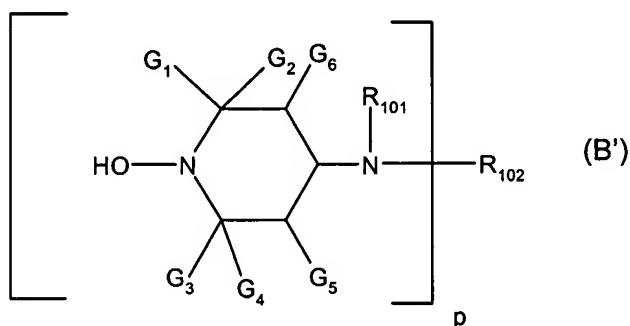
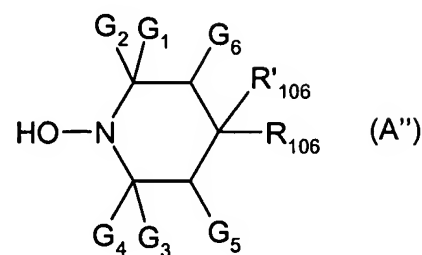
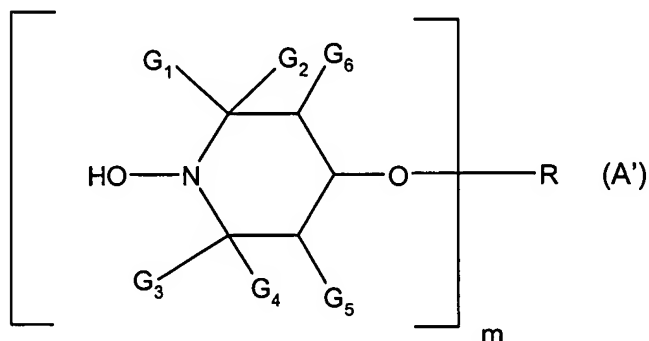
9. (currently amended) A polymerizable composition comprising

a) an ethylenically unsaturated monomer;

b) a radical polymerization initiator; and

c) a hydroxylamine having a molecular weight of more than 250 g/mol

~~according to claim 7 wherein the compound of formula (I) is of formula A', A'', B' or O'~~



wherein

m is 1,

R is hydrogen, C<sub>1</sub>-C<sub>18</sub>alkyl which is uninterrupted or interrupted by one or more oxygen atoms, cyanoethyl, benzoyl, glycidyl, a monovalent radical of an aliphatic carboxylic acid having 2 to 18 carbon atoms, of a cycloaliphatic carboxylic acid having 7 to 15 carbon atoms, or an α,β-unsaturated carboxylic acid having 3 to 5 carbon atoms or of an aromatic carboxylic acid having 7 to 15 carbon atoms;

p is 1;

R<sub>101</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>5</sub>-C<sub>7</sub>cycloalkyl, C<sub>7</sub>-C<sub>8</sub>aralkyl, C<sub>2</sub>-C<sub>18</sub>alkanoyl, C<sub>3</sub>-C<sub>5</sub>alkenoyl or benzoyl;

R<sub>102</sub> is C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>5</sub>-C<sub>7</sub>cycloalkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl unsubstituted or substituted by a cyano, carbonyl or carbamide group, or is glycidyl, a group of the formula -CH<sub>2</sub>CH(OH)-Z or of the formula -CO-Z or -CONH-Z wherein Z is hydrogen, methyl or phenyl;

R<sub>106</sub> and R'<sub>106</sub> together are both hydrogen, a group =O or =N-O-R<sub>120</sub> wherein

R<sub>120</sub> is H, straight or branched C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>3</sub>-C<sub>18</sub>alkenyl or C<sub>3</sub>-C<sub>18</sub>alkinyl, which may be unsubstituted or substituted by one or more OH, C<sub>1</sub>-C<sub>8</sub>alkoxy, carboxy

or C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl; or is C<sub>5</sub>-C<sub>12</sub>cycloalkyl or C<sub>5</sub>-C<sub>12</sub>cycloalkenyl;

or is phenyl, C<sub>7</sub>-C<sub>9</sub>phenylalkyl or naphthyl which may be unsubstituted or substituted by one or more C<sub>1</sub>-C<sub>8</sub>alkyl, halogen, OH, C<sub>1</sub>-C<sub>8</sub>alkoxy, carboxy or C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl;

or is -C(O)-C<sub>1</sub>-C<sub>36</sub>alkyl, or an acyl moiety of a  $\alpha,\beta$ -unsaturated carboxylic acid having 3 to 5 carbon atoms or of an aromatic carboxylic acid having 7 to 15 carbon atoms;

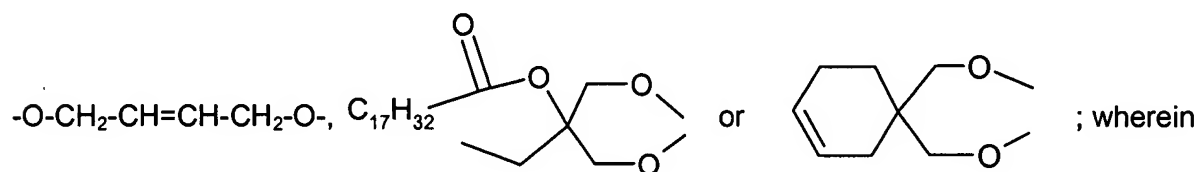
or is -SO<sub>3</sub><sup>-</sup>Q<sup>+</sup>, -PO(O<sup>-</sup>Q<sup>+</sup>)<sub>2</sub>, -P(O)(OR<sub>2</sub>)<sub>2</sub>, -SO<sub>2</sub>-R<sub>2</sub>, -CO-NH-R<sub>2</sub>, -CONH<sub>2</sub>, COOR<sub>2</sub>, or Si(Me)<sub>3</sub>, wherein Q<sup>+</sup> is H<sup>+</sup>, ammonium or an alkali metal cation; or

R<sub>106</sub> and R'<sub>106</sub> are independently -O-C<sub>1</sub>-C<sub>12</sub>alkyl, -O-C<sub>3</sub>-C<sub>12</sub>alkenyl, -O-C<sub>3</sub>-C<sub>12</sub>alkinyl,

-O-C<sub>5</sub>-C<sub>8</sub>cycloalkyl, -O-phenyl, -O-naphthyl or -O-C<sub>7</sub>-C<sub>9</sub>phenylalkyl; or

R<sub>106</sub> and R'<sub>106</sub> together form one of the bivalent groups -O-C(R<sub>121</sub>)(R<sub>122</sub>)-CH(R<sub>123</sub>)-O-,

-O-CH(R<sub>121</sub>)-CH<sub>122</sub>-C(R<sub>122</sub>)(R<sub>123</sub>)-O-, -O-CH(R<sub>122</sub>)-CH<sub>2</sub>-C(R<sub>121</sub>)(R<sub>123</sub>)-O-, -O-CH<sub>2</sub>-C(R<sub>121</sub>)(R<sub>122</sub>)-CH(R<sub>123</sub>)-O-, -O-o-phenylene-O-, -O-1,2-cyclohexyliden-O-,



R<sub>121</sub> is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, COOH, COO-(C<sub>1</sub>-C<sub>12</sub>)alkyl or CH<sub>2</sub>OR<sub>124</sub>;

R<sub>122</sub> and R<sub>123</sub> are independently hydrogen, methyl ethyl, COOH or COO-(C<sub>1</sub>-C<sub>12</sub>)alkyl;

R<sub>124</sub> is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, benzyl, or a monovalent acyl residue derived from an aliphatic, cycloaliphatic or aromatic monocarboxylic acid having up to 18 carbon atoms;

G<sub>6</sub> is hydrogen and G<sub>5</sub> is hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl, and

G<sub>1</sub>, G<sub>2</sub>, G<sub>3</sub> and G<sub>4</sub> are methyl; or

G<sub>1</sub> and G<sub>3</sub> are methyl and G<sub>2</sub> and G<sub>4</sub> are ethyl or propyl or G<sub>1</sub> and G<sub>2</sub> are methyl and G<sub>3</sub> and G<sub>4</sub> are ethyl or propyl.

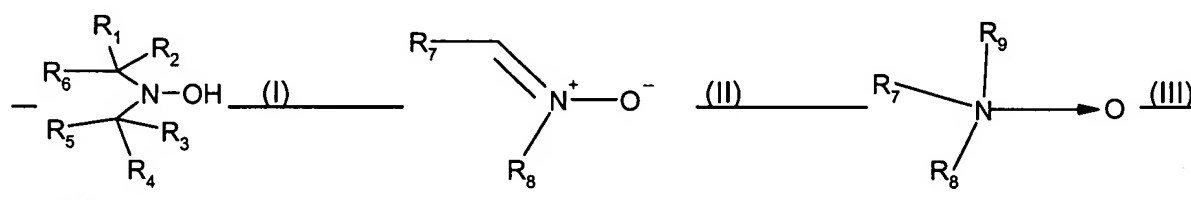
**10. (currently amended)** A polymerizable composition according to claim **[7]** ~~wherein in~~ comprising a hydroxylamine of formula (I) where

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are hydrogen; and  
 R<sub>5</sub> and R<sub>6</sub> independently are C<sub>7</sub>-C<sub>35</sub>alkyl or C<sub>7</sub>-C<sub>35</sub>alkenyl.

**11. (currently amended)** A process for preparing an oligomer, a cooligomer, a polymer or a copolymer (block, random or graft) by free radical polymerization of at least one ethylenically unsaturated monomer or oligomer, which comprises (co)polymerizing the monomer or monomers/oligomers in the presence of

- b) a free radical initiator and
- c) a hydroxylamine, a nitron or an alkyl N-oxid having a molecular weight of more than 250 g/mol,

where the hydroxylamine, the nitron or the alkyl N-oxid are of formulae (I), (II) or (III)



where

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are independently hydrogen, phenyl or C<sub>1</sub>-C<sub>4</sub>alkyl;

R<sub>5</sub> and R<sub>6</sub> are independently C<sub>7</sub>-C<sub>35</sub>alkyl, C<sub>7</sub>-C<sub>35</sub>alkenyl or C<sub>7</sub>-C<sub>35</sub>alkinyl, which may be unsubstituted or substituted by phenyl, halogen, NH<sub>2</sub>, N(R<sub>21</sub>)<sub>2</sub>, -OH, -CN, -NO<sub>2</sub>, or -COOR<sub>21</sub>; or which may be interrupted by -O- or -C(O)-; or

R<sub>5</sub> and R<sub>6</sub> together are an alkylene bridge, which may be interrupted by a -O-, -C(O)- or a -N(C<sub>1</sub>-C<sub>18</sub>alkyl)- group to form a heterocyclic 5, 6, 7 or 8 membered ring, which may be further substituted by a -O-C(O)-]<sub>n</sub>R<sub>20</sub>, NR<sub>21</sub>-C(O)-]<sub>n</sub>R<sub>20</sub> or a ketal group;

n is 1 or 2; wherein, when n is 1, R<sub>20</sub> is hydrogen or C<sub>1</sub>-C<sub>18</sub>alkyl and, when n is 2, R<sub>20</sub> is

C<sub>1</sub>-C<sub>18</sub>alkylene; R<sub>21</sub> is hydrogen or C<sub>1</sub>-C<sub>18</sub>alkyl;

R<sub>7</sub> and R<sub>8</sub> are independently C<sub>8</sub>-C<sub>36</sub>alkyl; and

R<sub>9</sub> is C<sub>1</sub>-C<sub>4</sub>alkyl.

**12. (previously presented)** A process according to claim 11 wherein the polymer obtained has a polydispersity of between 1.1 and 2.5.

**13. (previously presented)** A process according to claim **11** wherein the polymerization is carried out by heating and takes place at a temperature of between 70°C and 160°C.

**14. (original)** A process according to claim **11** wherein the hydroxylamine, the nitron or the alkyl N-oxid having a molecular weight of more than 250 g/mol is present in an amount of 0.001 to 10 mol % based on the monomer or monomers.

**15. (original)** A process according to claim **11** wherein the weight ratio between the radical polymerization initiator and the hydroxylamine, the nitron or the alkyl N-oxid having a molecular weight of more than 250 g/mol is from 1:5 to 5:1.

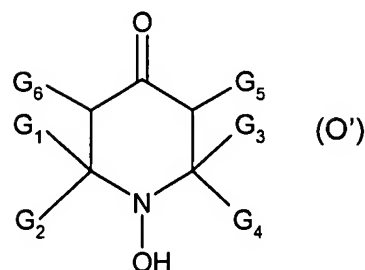
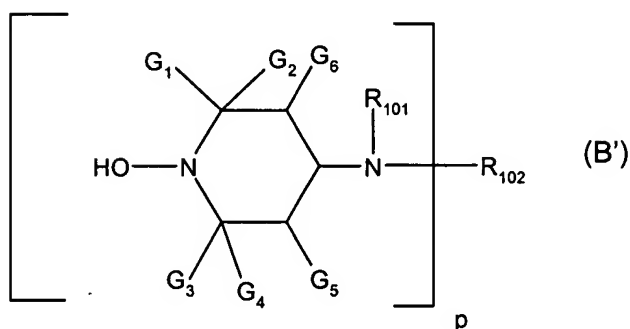
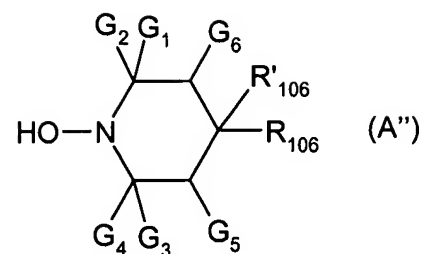
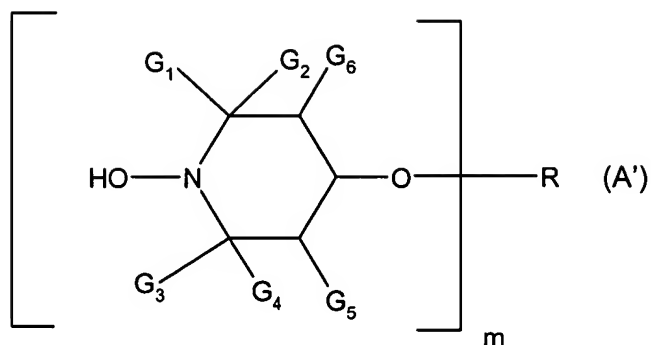
**16. (previously presented)** A polymer or copolymer obtained by a process according to claim **11**.

**17. (canceled)**

**18. (new)** A process for preparing an oligomer, a cooligomer, a polymer or a copolymer (block, random or graft) by free radical polymerization of at least one ethylenically unsaturated monomer or oligomer, which comprises (co)polymerizing the monomer or monomers/oligomers in the presence of

b) a free radical initiator and

c) a hydroxylamine having a molecular weight of more than 250 g/mol of formula A', A'', B' or O'



wherein

m is 1,

R is hydrogen, C<sub>1</sub>-C<sub>18</sub>alkyl which is uninterrupted or interrupted by one or more oxygen atoms, cyanoethyl, benzoyl, glycidyl, a monovalent radical of an aliphatic carboxylic acid having 2 to 18 carbon atoms, of a cycloaliphatic carboxylic acid having 7 to 15 carbon atoms, or an  $\alpha,\beta$ -unsaturated carboxylic acid having 3 to 5 carbon atoms or of an aromatic carboxylic acid having 7 to 15 carbon atoms;

p is 1;

R<sub>101</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>5</sub>-C<sub>7</sub>cycloalkyl, C<sub>7</sub>-C<sub>8</sub>aralkyl, C<sub>2</sub>-C<sub>18</sub>alkanoyl, C<sub>3</sub>-C<sub>5</sub>alkenoyl or benzoyl;

R<sub>102</sub> is C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>5</sub>-C<sub>7</sub>cycloalkyl, C<sub>2</sub>-C<sub>8</sub>alkenyl unsubstituted or substituted by a cyano, carbonyl or carbamide group, or is glycidyl, a group of the formula -CH<sub>2</sub>CH(OH)-Z or of the formula -CO-Z or -CONH-Z wherein Z is hydrogen, methyl or phenyl;

R<sub>106</sub> and R'<sub>106</sub> together are both hydrogen, a group =O or =N-O-R<sub>120</sub> wherein

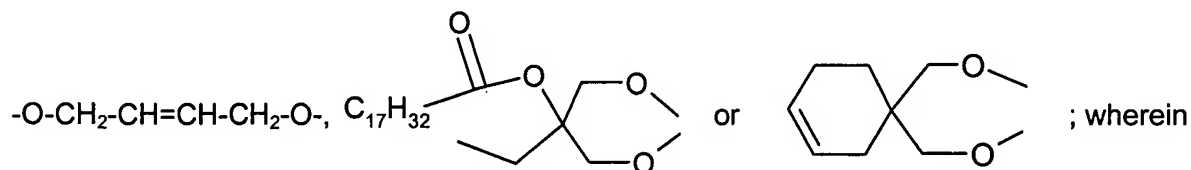
R<sub>120</sub> is H, straight or branched C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>3</sub>-C<sub>18</sub>alkenyl or C<sub>3</sub>-C<sub>18</sub>alkinyl, which may be unsubstituted or substituted by one or more OH, C<sub>1</sub>-C<sub>8</sub>alkoxy, carboxy or C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl; or is C<sub>5</sub>-C<sub>12</sub>cycloalkyl or C<sub>5</sub>-C<sub>12</sub>cycloalkenyl; or is phenyl, C<sub>7</sub>-C<sub>9</sub>phenylalkyl or naphthyl which may be unsubstituted or substituted by one or more C<sub>1</sub>-C<sub>8</sub>alkyl, halogen, OH, C<sub>1</sub>-C<sub>8</sub>alkoxy, carboxy or C<sub>1</sub>-C<sub>8</sub>alkoxycarbonyl;

or is  $-\text{C}(\text{O})-\text{C}_1-\text{C}_{36}\text{alkyl}$ , or an acyl moiety of a  $\alpha,\beta$ -unsaturated carboxylic acid having 3 to 5 carbon atoms or of an aromatic carboxylic acid having 7 to 15 carbon atoms;

or is  $-\text{SO}_3^-\text{Q}^+$ ,  $-\text{PO}(\text{O}^-\text{Q}^+)_2$ ,  $-\text{P}(\text{O})(\text{OR}_2)_2$ ,  $-\text{SO}_2-\text{R}_2$ ,  $-\text{CO}-\text{NH}-\text{R}_2$ ,  $-\text{CONH}_2$ ,  $\text{COOR}_2$ , or  $\text{Si}(\text{Me})_3$ , wherein  $\text{Q}^+$  is  $\text{H}^+$ , ammonium or an alkali metal cation; or

$\text{R}_{106}$  and  $\text{R}'_{106}$  are independently  $-\text{O}-\text{C}_1-\text{C}_{12}\text{alkyl}$ ,  $-\text{O}-\text{C}_3-\text{C}_{12}\text{alkenyl}$ ,  $-\text{O}-\text{C}_3-\text{C}_{12}\text{alkinyl}$ ,  $-\text{O}-\text{C}_5-\text{C}_8\text{cycloalkyl}$ ,  $-\text{O}-\text{phenyl}$ ,  $-\text{O}-\text{naphthyl}$  or  $-\text{O}-\text{C}_7-\text{C}_9\text{phenylalkyl}$ ; or

$\text{R}_{106}$  and  $\text{R}'_{106}$  together form one of the bivalent groups  $-\text{O}-\text{C}(\text{R}_{121})(\text{R}_{122})-\text{CH}(\text{R}_{123})-\text{O}-$ ,  $-\text{O}-\text{CH}(\text{R}_{121})-\text{CH}_2-\text{C}(\text{R}_{122})(\text{R}_{123})-\text{O}-$ ,  $-\text{O}-\text{CH}(\text{R}_{122})-\text{CH}_2-\text{C}(\text{R}_{121})(\text{R}_{123})-\text{O}-$ ,  $-\text{O}-\text{CH}_2-\text{C}(\text{R}_{121})(\text{R}_{122})-\text{CH}(\text{R}_{123})-\text{O}-$ ,  $-\text{O}-\text{o-phenylene}-\text{O}-$ ,  $-\text{O}-1,2\text{-cyclohexyliden}-\text{O}-$ ,



$\text{R}_{121}$  is hydrogen,  $\text{C}_1-\text{C}_{12}\text{alkyl}$ ,  $\text{COOH}$ ,  $\text{COO}-(\text{C}_1-\text{C}_{12})\text{alkyl}$  or  $\text{CH}_2\text{OR}_{124}$ ;

$\text{R}_{122}$  and  $\text{R}_{123}$  are independently hydrogen, methyl ethyl,  $\text{COOH}$  or  $\text{COO}-(\text{C}_1-\text{C}_{12})\text{alkyl}$ ;

$\text{R}_{124}$  is hydrogen,  $\text{C}_1-\text{C}_{12}\text{alkyl}$ , benzyl, or a monovalent acyl residue derived from an aliphatic, cycloaliphatic or aromatic monocarboxylic acid having up to 18 carbon atoms;

$\text{G}_6$  is hydrogen and  $\text{G}_5$  is hydrogen or  $\text{C}_1-\text{C}_4\text{alkyl}$ , and

$\text{G}_1$ ,  $\text{G}_2$ ,  $\text{G}_3$  and  $\text{G}_4$  are methyl; or

$\text{G}_1$  and  $\text{G}_3$  are methyl and  $\text{G}_2$  and  $\text{G}_4$  are ethyl or propyl or  $\text{G}_1$  and  $\text{G}_2$  are methyl and  $\text{G}_3$  and  $\text{G}_4$  are ethyl or propyl.